

Occidental College Department of Mathematics
Gateway – Exponents (practice)

Course: _____ Date: _____ Name: _____

Show all of your work on this (or additional) sheets.

1. Simplify: $x^{-9}x^5$

2. Simplify: $(x^{-3})^3$

3. Simplify: $(x^3x^5)^{-2}$

4. Simplify: $(x^2y)^3(x^{-1}y^3)$

5. Simplify: $\left(\frac{64}{4}\right)^{1/2}$

6. Assume $x, y, z > 0$. Rewrite the following with exponents to eliminate the square root: $\sqrt{x^{-4}y^2z^3}$

7. Simplify the following and get rid of all negative exponents: $\frac{xz^{-3}}{xy^{-2}z^{-5}}$

8. Simplify the following and get rid of all negative exponents: $\left(\frac{x^2y^3}{x^{-3}y^5}\right)^{-4}$

9. Solve for x : $4^{3x} = 16$

10. Solve for x : $2 = 18 - 4^{x+1}$